

LIS009408972B2

# (12) United States Patent Cappello et al.

# (54) NEEDLE-FREE INJECTION DEVICE

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(\*) Notice: Subject to any disclaimer, the term of this

patent is extended or adjusted under 35

U.S.C. 154(b) by 527 days.

(21) Appl. No.: 13/196,419

(22) Filed: Aug. 2, 2011

(65) Prior Publication Data

US 2013/0035634 A1 Feb. 7, 2013

(51) Int. Cl.

**A61M 25/00** (2006.01) **A61M 5/30** (2006.01)

A61M 5/20 (2006.01)

(52) U.S. Cl.

(58) Field of Classification Search

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# (10) Patent No.:

US 9,408,972 B2

## (45) **Date of Patent:**

Aug. 9, 2016

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## (57) ABSTRACT

A needle-free injection device having an outer housing and an inner housing is disclosed. The inner housing is configured to receive a needle-free syringe in one end. In addition, the inner housing is movable within the outer housing between a syringe loading position and a firing position. The device also includes an activation button operatively associated with the inner and outer housings and a housing lock engaged by the activation button to prohibit movement of the inner housing from the syringe loading position to the firing position when the activation button is activated with the inner housing in the syringe loading position. Methods and apparatus for using, filing and operating the needle-free injection device are also disclosed.

#### 31 Claims, 8 Drawing Sheets



